Remarks:

This application has been reviewed carefully in view of the Office Action mailed August 4, 2005, ("the Office Action"). In the Office Action, claims 1-5, 9, 14-19, 21 and 22 were rejected under 35 U.S.C. § 102(e), as allegedly anticipated by Bowman et al., U.S. Pat. Pub. 2004/0107718. Claims 10, 20 and 23 were rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Bowman et al., and Claims 6, 8 and 12 were rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Bowman et al., in view of Garner, U.S. Pat. No. 6,657,121.

The above-described rejections are addressed as follows:

1. REJECTIONS OVER THE CITED ART

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *See*, M.P.E.P. § 706.02, citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Likewise, to establish a *prima facie* case of obviousness, the prior art references, when combined, must teach or suggest all the claim limitations. *See,* M.P.E.P. § 706.02(j).

a. Independent Claims 1 and 19 and Their Dependent Claims

A fundamental difference exists between the Bowman et al. device and the present invention. The Bowman et al. device operates using refrigeration, while the presently claimed device operates by using heat to drive cooling fluid through a phase change. More particularly, Bowman et al. uses a refrigerant, which is pressurized and pumped in circulation by a compressor, and which is released from a high-pressure zone to a low pressure zone, allowing the refrigerant to expand and evaporate within the evaporator, resulting in a drop in refrigerant temperature (see, Bowman et al., para. 56). Cooling of a heat source then occurs by thermally exposing the heat source to the already evaporated

gas. Like any refrigerator, the Bowman et al. device must use significant energy to drive its compressor, and its reliability is limited by the reliability of the compressor.

Rather than using a gaseous refrigerant, the present device uses phase-change evaporators, such as spray coolers or pool boilers (see, the present application, page 7, lines 21-26) to cool the heat source. In some embodiments, the present invention provides significant cooling abilities while requiring no power for coolant circulation. Because it has no compressor, its reliability is not limited by the reliability of a compressor.

As amended, independent claim 1 recites "an evaporator in thermal communication with the first computer component, the evaporator being configured to dissipate heat from the first computer component by using that heat to drive a stream of liquid coolant through a phase change into a stream of coolant vapor." As amended, claim 19 recites a similar evaporator. Bowman et al. fails to disclose an evaporator that dissipates heat by using it to drive a stream of liquid coolant through a phase change.

Because the cited art fails to teach or suggest the claimed evaporator, as recited in amended claims 1 and 19, the Office Action fails to establish a *prima facie* case of obviousness. Dependent claims 2-6, 8-10, 12 and 20 incorporate the limitations of either independent claim 1 or independent claim 19. Accordingly, the rejections of claims 1-6, 8-10, 12, 19 and 20, under 35 U.S.C. § 102(b) or 103(a) are improper, and Applicants respectfully request they be withdrawn.

b. Claim 3

Claim 3 recites that "the evaporator and the condenser are configured as a gravity-driven, pumpless, closed-loop cooling system." On page 3, the Office Action identifies figure 10 and paragraph [0054] as disclosing a gravity-driven, pumpless, closed-loop cooling system. Paragraph 54 identifies that first turbomachine 505 (including compressor 530), condenser 515 and expander/evaporator 520 are part of a closed-loop refrigeration cycle (CLRC) 525. Paragraph [0055] expands on this to say that under operating conditions, first turbomachine 505 operates to drive a refrigerant through the

CLRC. This comports with common knowledge in the art, in that it is well known that a compressors pump refrigerant throughout refrigeration systems. Therefore, the Bowman et al. device is not pumpless.

Because the cited art fails to teach or suggest the claimed apparatus, as recited in claim 3, the Office Action fails to establish a *prima facie* case of obviousness. Accordingly, the rejection of claim 3, under 35 U.S.C. § 102(e) is improper, and Applicants respectfully request it be withdrawn.

c. Independent Claims 14 and 15 and Their Dependent Claims

A feature of the present invention is that the air used to cool the heat exchanger, while it has been warmed, is still typically cool enough to be used for cooling other components. It is not disclosed that this would be true for a refrigeration-based system. Moreover, Bowman et al. fails to disclose such a system.

Claim 14 recites a means for transferring the removed heat out of the chassis, wherein the means for transferring causes airflow that directly cools the one or more additional components, and wherein the means for transferring draws air through the condenser, and blows the air toward the one or more additional computer components. Claim 15 recites the step of transferring the removed heat out of the chassis by absorbing the heat in a stream of air drawn through the condenser, wherein the stream of air is blown toward the one or more additional computer components to directly cool the one or more additional computer components. Thus, both claims 14 and 15 positively claim a configuration where an airstream is drawn through the condenser, and then directed toward additional components to cool those compliments.

As shown in figure 10, the Bowman et al. device includes a fan 550 that provides two separate streams of air. One stream of air is cooled by passing through the evaporator. That airstream is sent on to cool the integrated circuits. Another stream of air is heated while passing through the condenser. That airstream is exhausted from the system without being directed at the integrated circuits.

Because the cited art fails to teach or suggest the claimed apparatus, as recited in claims 14 and 15, configured such that air is drawn through the condenser and then used to cool components, the Office Action fails to establish a *prima facie* case of obviousness. Dependent claims 16-18 incorporate the limitations of independent claim 15. Accordingly, the rejections of claim 14-18, under 35 U.S.C. § 102(e) are improper, and Applicants respectfully request they be withdrawn.

d. Independent Claims 21 and 22 and Their Dependent Claims

In features related to those of claims 14 and 15, amended claim 21 recites an air mover configured to cool the plurality of cooling fins, wherein the air mover forces air through the cooling fins, and wherein the air mover forces the resulting airflow into thermal communication with the one or more additional computer components. Likewise, amended claim 22 recites a condenser configured to be cooled by dissipating heat from the stream of coolant vapor into an airstream, and an air mover configured to create the airstream that cools the condenser, wherein the air mover forces the airstream into thermal communication with the one or more additional computer components.

Because the cited art fails to teach or suggest the claimed apparatus, as recited in amended claims 21 and 22, configured such that air is drawn through the cooling fins/condenser and then used to cool components, the Office Action fails to establish a *prima facie* case of obviousness. Dependent claim 23 incorporates the limitations of independent claim 22. Accordingly, the rejections of claim 21-23, under 35 U.S.C. § 102(e) or 103(a) are improper, and Applicants respectfully request they be withdrawn.

2. CONCLUSION

In view of the foregoing, Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

BASH et al.

By: _____

John A. Griecci
Registration No. 39,694
For: The Law Office of John A. Griecci

703 Pier Avenue, Suite B #657
Hermosa Beach, CA 90254
(310) 376-6527